



Estimating changes in mortality due to climate change

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Abstract:

A method for estimating the changes in mortality resulting from observed or projected climate changes is presented. The method avoids reliance on observed and projected changes in extreme temperatures, and also avoids the confounding effects of long-term influences on mortality such as changes in populations and improvements in medical services. The method relies on the existence of a close correlation between high-pass filtered values of a health indicator variable and a climate variable. Where such a relationship exists, the method provides a simple and robust way to estimate past and future health effects of climate trends. The method is used to estimate the effects of warming of winter temperatures on mortality amongst persons aged 65 years and above, in Melbourne, Australia. The observed warming of 0.7A degrees C over the period 1979-2001 is estimated to have caused a decline in winter mortality of 4.5%, slightly offsetting an observed increase in mortality due to an increasing elderly population. A further 2A degrees C warming could be expected to lead to a decline in winter mortality of 13%. The method was also tested on summer mortality of New York City residents aged 75 years and above. In this case a 2A degrees C warming would lead to a 2.6% increase in mortality.

Source: <http://dx.doi.org/10.1007/s10584-009-9694-z>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Cold, Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States, United States

Non-United States: Australasia

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Health Impact:

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Methodology, Outcome Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content